

## **George Wright Symposium**

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### **Biological and Ecological Consequences of Contaminants in western Parks**

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### **ABSTRACT**

An important objective of the Western Airborne Contaminants Assessment Project (WACAP) is to assess biological and ecological effects of atmospheric semi-volatile organic compounds, metals, and fixed-nitrogen contaminants. To understand the fate of these contaminants in park ecosystems, we calculated total contaminant burdens in terrestrial and aquatic ecosystem compartments from measured concentrations in vegetation, snow, lake water, sediments, fish and moose and used a mass balance approach to evaluate fluxes. To examine bioaccumulation, we assessed the accumulation, magnification, and effects of contaminants in the ecosystem components we measured. Biological responses to contaminants in fish indicate effects on the endocrine and immune systems. For example, the appearance of eggs in male fish and elevated estrogen-responsive protein seems related to estrogenic contaminants. We also identified correlations between pigmented inflammatory cells and whole-body mercury. Finally we discuss linkages between WACAP data and other studies of the ecological effects of contaminants.

